

ABSTRACT

5 The invention is directed generally to the structure of prenyltransferases, particularly undecaprenyl pyrophosphate synthase, an enzyme important in bacterial cell wall synthesis. The invention relates to the crystal structure of undecaprenyl pyrophosphate synthase from *Staphylococcus aureus* and the interaction with a cofactor and ligands. The invention also relates to the structure of ligand and cofactor binding sites.

10